

PATENT SPECIFICATION

(11) 1208720

DRAWINGS ATTACHED

- (21) Application No. 12307/69 (22) Filed 7 March 1969
 (31) Convention Application No. 711 683 (32) Filed 8 March 1968 in
 (33) United States of America (US)
 (45) Complete Specification published 14 Oct. 1970
 (51) International Classification B 65 d 83/04
 (52) Index at acceptance
 B8P 1H 2A1 3 6R1 8J 9C 9F2
 B8C 15C



(54) TABLET DISPENSING DEVICE

(71) We, ORTHO PHARMACEUTICAL CORPORATION, a Corporation of the State of New Jersey, United States of America, of Raritan, State of New Jersey, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to a tablet dispensing device.

It has become the general practice in the treatment of patients to prescribe that medication be taken in accordance with a fairly rigid time schedule. This is particularly true in the case of oral contraceptives where the user must adhere strictly to a schedule of use which is determined by the user's individual menstrual cycle. Failure to adhere to the prescribed schedule of use will generally result in a failure of the medication to induce the physiological effect on which contraception is based.

In order to assist users of oral contraceptives in following the prescribed regimen, oral contraceptive tablets are generally packaged in dispensers which permit the user to determine immediately on any given day of the week whether a tablet was in fact taken that day. This is most often accomplished by associating an empty or occupied tablet position with indicia representing the particular day of the week.

The present invention provides a tablet dispenser, which comprises a base containing an essentially parallel series of columns of tablet locations, the number of columns being equal to the number of medicament doses to be taken in a given cycle of time, an indicia of time representing a point of time within the cycle of time at which medication is to be taken being associated with each of the columns of tablet locations, the series of indicia so formed being arranged sequentially with respect to time and being located on a movable member mounted in the base, a plurality of said series of indicia equal in number to or greater than the number of

medicament doses to be taken in said cycle of time being arranged in sequence in the direction of movement of and on the surface of the movable member and at least one series of indicia beginning with the indicia representing each point in time at which medicament is to be taken, the movable member being so located and the spacing of the individual indicia in the series being such that an indicia of each series is visibly registerable with each column of table locations.

Generally the tablet locations in the dispensers of this invention will most often be apertures formed in the dispenser base and slightly larger than the tablets to be dispensed. The tablets which are to be dispensed are generally contained in a press out laminate. The tablets are arranged in the laminate in such a pattern as to register with the apertures in the dispenser base. By thus exerting downward pressure on any given tablet, the portion of the laminate underlying the tablet and overlying the aperture is ruptured and the tablet expelled through the aperture into the hand of the patient.

Preferably the movable member carrying the indicia is of circular cross-section and is rotatably mounted in the base. When the movable member is a cylinder, each series of indicia is suitably printed axially on the surface of the cylinder and the spacing of the individual indicia is such that an indicia is visibly registerable with each column of tablets. The plurality of these series of indicia are disposed circumferentially of the cylinder. Thus, by rotating the cylinder, any given dosage time may be visibly registered with the first column of tablets, the remaining dosage times thus registering with the remaining columns of tablets.

An appropriate series of indicia may thus be visibly associated with the columns of tablet locations according to the user's particular physiological cycle.

By virtue of this construction the patient can be instructed to position the movable member carrying the indicia so that the in-

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indicia representing the first point in time that medication is to be taken visibly registers with the first column of tablet locations, that is, the column located at the far left side of the dispenser base. Indicia representing subsequent points in time at which medication is to be taken will automatically visibly register with each of the other columns of tablet locations. The patient can be instructed to take the first tablet in the first column of tablets at the first time of indicated use and to thereafter take the first tablet in each successive column, moving from left to right, at the indicated point in time until the last column of tablets is reached, at which time a given cycle of time, e.g. one day or one week, is completed. The user is instructed to then take the second tablet in the first column of tablets and to continue the above procedure until the supply of tablets is exhausted.

In the dispensers of the present invention the tablets associated with a given point of time are always located in the same column.

The dispenser of this invention also eliminates the main problem, namely, there is no natural "first tablet" associated with tablet dispensers wherein a given indicia of time is permanently associated with a given tablet or column of tablets. In the case of circular dispensers with either singular or plural series of fixed indicia, there is no location along the circumference of the circle which is a natural "first tablet" location. Likewise, after the first tablet is taken there is no natural "second tablet". The problem is no less serious in the case of a calendar type device, wherein the user, except by pure chance, begins the regimen somewhere in the centre of the matrix of tablets, works toward the bottom of the calendar, and then completes the regimen at the top of the calendar.

The dispenser of this invention is also superior to the dispensers wherein the number of columns of tablets is either greater or lesser than the number of doses of the medication taken in a natural calendar cycle of time. Thus, for example, in a once a day regimen, Monday's tablet may be located in the first column of tablets one week but in the second column of tablets the second week. In the dispensers of this invention the tablet associated with a given point in time is always located in the same column of tablets.

A specific embodiment of the present invention will now be described by way of example and with specific reference to the accompanying drawings in which:—

Figure 1 is a view in perspective of a tablet dispenser of the present invention;

Figure 2 is a view in perspective of the movable indicia carrying member of the dispenser of Figure 1;

Figure 3 is a view of the surface of the

movable calendar means of Figure 2 in "flat" condition;

Figure 4 is a plan view of the dispenser of Figure 1;

Figure 5 is a cross-sectional view through the base of the dispenser of Figure 4 along line A—A;

Figure 6 is a schematic representation of the dispensing of a tablet from the dispensers of the invention.

Referring to Figures 1 to 6, the tablet dispenser 1, has a molded plastic base consisting of a top, 2a, and a bottom, 2b. The bottom, 2b, contains seven parallel columns, 3, of tablet locations in the form of apertures, 4, with three apertures in each column. The number of columns of tablet locations is equal to the number of tablets (seven) to be taken in a given conventional calendar cycle of time (one week), the dispenser being designed for use with contraceptive tablets.

At the top of each column, 3, of apertures, 4, is a window, 5, through which is seen an indicia, 6, representing a day of the week and these indicia are arranged in chronological order from left to right. As shown in Figure 3, this series, 7, of indicia is printed on a sheet, 10, which is wrapped around a cylinder, 8, so that each series of indicia are disposed axially about the cylinder. The cylinder is mounted on axle, 8a, in the base, and is rotatable in either direction. The cylinder is so positioned in the base that each indicia in the series, 7, coincides with a column of tablet locations.

Seven series of indicia, 6, are printed in parallel rows on the sheet, 10, so that when the sheet is wound on the cylinder the series will be adjacently disposed around the circumference of the cylinder. Each series begins with an indicia representing a different day of the week. The cylinder, 8, is provided at one end with a knurled portion, 9, which enables the cylinder to be turned when it is in position in the base.

The base bottom, 2b, is adapted to receive a laminate, 11, only a portion of which is shown in Figure 1. The laminate is made up of a thin, rupturable metal foil, 13, and a transparent, pliable film, 14, intimately bonded to the foil sheet, 13, forming a series of tablet compartments, 12, occupied by tablets, 17. Each tablet is arranged so that when the laminate, 11, is inserted into the base bottom, 2b, each tablet, 17, lies over an aperture, 4.

In using the dispenser illustrated, the indicia carrying cylinder, 8, is rotated until the day of the week on which the menstrual cycle began appears adjacent the row tablets under the indicator, 15, "First Period Day". The first tablet is then taken on the day corresponding to the day of the week represented by the indicia, 16, adjacent the first row of

tablets. On each successive day, the succeeding tablet from left to right are taken.

Referring specifically to Figure 6 of the drawings to dispense a tablet, 17, pressure is applied to the plastic film, 14, over the tablet, 17. The foil sheet, 13, is thereby ruptured and the tablet, 17, passes through the aperture, 4.

In order to prevent the accidental turning of the cylinder, 8, after it has been set, any convenient friction or ratchet device may be used. Since the pattern of tablet administration should not change from month to month, another convenient way to prevent the accidental turning of cylinder, 8, is to make provision for snapping knurled nob, 9, from the cylinder once the proper setting has been obtained.

The invention is not limited to the specific embodiment described with reference to the accompanying drawings. Thus, for example, for a tablet dispenser designed for use other than with contraceptive tablets, the number of columns of tablet locations may be other than seven and the number of tablet locations in each column may be other than three. Furthermore, the cylinder, 8, may be replaced by any other suitable movable member.

WHAT WE CLAIM IS:—

1. A tablet dispenser which comprises a base containing an essentially parallel series of columns of tablet locations, the number of columns being equal to the number of medicament doses to be taken in a given cycle of time, an indicia of time representing a point of time within the cycle of time at which medication is to be taken being associated with each of the columns of tablet locations, the series of indicia so formed being arranged sequentially with respect to time and being located on a movable member mounted in the base, a plurality of said series of indicia

equal in number to or greater than the number of medicament doses to be taken in said cycle of time being arranged in sequence in the direction of movement of and on the surface of the movable member and at least one series of indicia beginning with the indicia representing each point in time at which medicament is to be taken, the movable member being so located and the spacing of the individual indicia in the series being such that an indicia of each series is visibly registerable with each column of tablet locations.

2. A tablet dispenser as claimed in claim 1, wherein the movable member is rotatably mounted in the base.

3. A tablet dispenser as claimed in claim 1 or claim 2 wherein the movable member is cylindrical, each series of indicia is axially disposed on the surface of the cylinder and the plurality of series of indicia is circumferentially arranged about the cylinder.

4. A tablet dispenser as claimed in claim 1 or claim 2 or claim 3 which comprises a press-out laminate having a rupturable bottom member, a flexible top member and a series of pills disposed between said bottom member and said top member, said top member being sealed to said bottom member in the areas formed between said tablets, the tablets being arranged to coincide with the tablet locations in the base of said dispenser and the tablet locations consisting of tablet apertures.

5. A tablet dispenser substantially as described herein with reference to Figures 1 to 6 of the accompanying drawings.

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Chartered Patent Agents,
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Printed for Her Majesty's Stationery Office, by the Courier Press, Leamington Spa, 1970.
Published by The Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.

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1 SHEET

This drawing is a reproduction of
the Original on a reduced scale.



Fig. 3.



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